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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09-902,957	07/11/2001	Ajit B. Dandekar	2001B075	9213

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EXAMINER

DANG, THUAN D

ART UNIT	PAPER NUMBER
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1764

12

DATE MAILED: 05/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/902,957

Applicant(s)

DANDEKAR ET AL.

Examiner

Thuan D. Dang

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 1764

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holtermann et al (5,149,894) alone, alternatively in view of Ward et al (4,185,040).

Art Unit: 1764

Holtermann discloses a process of alkylation of benzene with propylene to produce cumene under a liquid phase and in the presence of a SSZ-25 zeolitic catalyst (the abstract; col. 9, lines 32-59).

Although, Holtermann is silent as to a specific ratio of surface area and volume as claimed by applicants, Holtermann clearly teaches that shapes of the catalyst with enhanced surface-to-volume ratios can be employed to enhance mass transfer rates and, thus, catalytic activity (col. 8, lines 44-50). Alternatively, Ward who teaches a similar alkylation discloses that by shaping the extrudates so as to give a high ratio of external surface area to volume, resistance to deactivation is found to be much improved, as well as activity and selectivity (the abstract; col. 2, lines 38-53).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Holtermann process by selecting an appropriate surface/area ratio of the catalyst, known as an effective variable, alternatively the surface/volume ratio disclosed by Ward to optimize the process since it has been held by the patent law that the selection of reaction parameters would have been obvious. More particularly, where the general conditions of the claimed are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller* 105 USPQ 233, 255 (CCPA 1955). *In re Waite* 77 USPQ 586 (CCPA 1948). *In re Scherl* 70 USPQ 204 (CCPA 1946). *In re Irmischer* 66 USPQ 314 (CCPA 1945). *In re Norman* 66 USPQ 308 (CCPA 1945). *In re Swenson* 56 USPQ 372 (CCPA 1942). *In re Sola* 25 USPQ 433 (CCPA 1935). *In re Dreyfus* 24 USPQ 52 (CCPA 1934).

Art Unit: 1764

The condition of temperature, pressure, and space velocity can be found on column 13, lines 7-22.

Claims 1, 2, 4, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward et al (4,185,040) in view of Holtermann et al (5,149,894).

Ward discloses an alkylation of benzene with propylene to produce cumene in the presence of a zeolitic catalyst having a surface/volume ratio of the applicants' claimed catalyst under the applicants' claimed condition including phase, temperature, pressure and space velocity (the abstract; col. 3, lines 56-59; col. 5, lines 15-40).

Ward discloses several exemplified zeolites able to be used as the catalyst but not one among the Markush group as called for in the present claims (col. 3, lines 36-43). However, Holtermann discloses using a catalyst containing SSZ-25 zeolite for propylating benzene to produce cumene (see the above rejection).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ward process by using the Holtermann catalyst since Holtermann discloses on column 4, lines 40-56 that SSZ-25 provides monoalkylated products (cumene is a monoalkylated product) in a higher yield and higher purity for much longer period of time than other zeolitic catalysts. Note that monoalkylated products are also desired by Ward (col. 2, lines 51-53).

Art Unit: 1764

*Response to Arguments*

Applicant's arguments with respect to the presence claims have been considered but are moot in view of the new ground(s) of rejection.

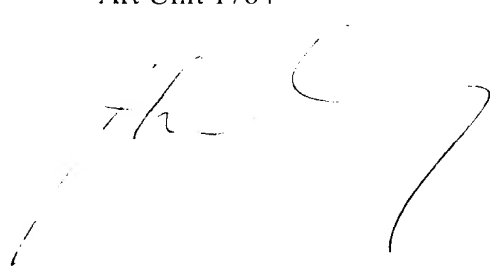
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 703-305-2658. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Thuan D. Dang  
Primary Examiner  
Art Unit 1764

93902957.3rd  
May 14, 2003

A handwritten signature in black ink, appearing to be 'T. Dang', is written over the printed name and title of the examiner.